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Differences on Personality Measures  
Related to Recruit Attrition

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Introduction

Cotton (1974) in his demographic studies has indicated that major problems relating to recruiting and attrition will face the Canadian Forces over the next decade. Not only will the recruiting base be smaller but the potential recruit will be better educated and with a different set of expectations. The present study attempts to shed further light on the phenomena of attrition by focussing on attrition during recruit training. This choice was influenced by the studies of Porter and Steers (1979) who indicate that the initial period of membership in an organization is the most critical as that is when most attrition occurs, and by VanMaanen and Schein (1977) who point out that a large number of studies demonstrate that early organizational experiences impact on one's later organizational behaviour.

However, recent reviews of the research literature on personnel turnover indicate that measures of personality, interests, and intelligence do not reveal what could be considered a consistent relationship with turnover across situations (Muchinsky and Tuttle, 1979; Mobley, Griffeth, Hand, and Meglino, 1979). Consistent cross-situational predictors were found to be personal predictors (age), attitudinal predictors (job satisfaction), and work related predictors (leadership). Mullin (1980) in reviewing these summaries and other research concluded with respect to the studies in attrition:

1. The knowledge of such "explanatory fiction" as "Job Satisfaction" or "Organizational Commitment" may be of descriptive or predictive value but adds nothing to the knowledge of the dynamics of attrition.
2. The level of aggregation has not been sufficiently dealt with in analysing attrition. That is to say, a macro organizational perspective tends to mask important differences at the sub unit level.
3. Grouping of all types of leavers into a single category within the stay/leave criterion may mask the potential predictive value of sub classes within the criterion group.

In the present attempt to determine whether personality variables relate to recruit attrition in the Canadian Forces, and what might underlie attrition, these observations were taken into account. Consequently, the main focus was placed on the within squad interaction between the NCO, the recruit and the recruit peer group. Also, several discrete and composite attrition categories were utilized.

To obtain useful answers to the questions raised relating to personality variables and the dynamics of their effects on vocational change, one must have a theory of vocational development that is broad enough to incorporate work values, interests, or beliefs, that is researchable, and is pragmatic enough to be useful to military career counsellors. The work of Holland (1973), to a large extent, satisfies these requirements by presenting both a logical and an empirical framework. In his personality-environment congruence hypothesis, Holland (1966) considers vocational achievement, satisfaction and stability to be related to the congruency between one's personality and the vocational environment largely composed of other people. Therefore, it was hypothesized in this study that recruits whose personality measures were similar to those of the squad NCO and to the largest personality grouping in the squad (modal) would show lower attrition than recruits whose personality measures were different. It was also hypothesized that work values were related to attrition. A third hypothesis was that in a high constraint, high discipline environment, with structured leadership, recruits with an External Locus of Control would have lower attrition.

### Method

In order to reliably measure different facets of personality that would likely relate to attrition, a number of personality measures were administered to all recruits on arrival at the Canadian Forces Recruit School, Cornwallis, and to their squad NCOs. These included Holland's Preference Inventory (VPI), Levenson's Locus of Control Scale (LCS) and Super's Work Values Inventory (WVI). Holland's VPI is a personality linked measure of vocational interest (Holland 1966) which implies that personality has a determining effect on choice of vocation. The Locus of Control Scale (Rotter 1954) is the measure of generalized expectancy or belief in the connection between one's behaviour and the occurrence of outcomes, thus affecting one's adaptation to life events. For example, Internals believe that their behaviour is responsible for reward and punishment, while Externals (C) attribute reward and punishment to fate or Chance and Externals (PO) attribute both to the action of Powerful Others. With respect to his WVI, Super (1957) implies that one's value system is a significant variable in the selection of a career. Thus, life values find expression in work. In all, 15 Work Values are measured.

During the periods 15 October 1979 to 18 November 1979 and 27 January 1980 to 3 March 1980, a total sample of 1306 English speaking male recruits ranging in age from 17-23 undergoing an eleven week basic training course at Canadian Forces Recruit School, Cornwallis were available of which 1070 were tested (on arrival) and 980 were used; (90 were released for reasons relating to purely medical, social or learning problems). The 30 squad NCOs responsible for this sample of recruits (comprising 41 squads ranging in size from 21 to 44 recruits) were also part of the sample. Fourteen of the NCOs commanded two different squads and thirteen commanded one squad only. Three acted in an assisting capacity only. All were experienced instructors from the combat arms.

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Eight single and three composite attrition categories were utilized:

<u>Category</u>	<u>Definition</u>
0	completed training - not recoured
2	failing course - requested release - granted
3	passing course - requested release - granted
4	failing course - learning ability
5	released - medical (physical only)
6	released - social (theft, homosexuality, chronic drug use)
7	poor performance - recoured and failed again
9	poor performance - recoured and passed
F-I	failed to adjust to initial squad (2, 3, 7, 9)
F-II	eventually left forces because of adjustment (2,3,7)
F-III	designated by squad NCO as failing (2,7,9).
P-I	Pass (0)
P-II	Pass (0+9)
P-III	Pass (0+3+9)

Table 1 VPI Types Related to Attrition From Forces

Personality Types (grouped)			
	I	II	
R (realistic)		E (Enterprising)	
C (conventional)		S (Social)	
I (Investigative)		A (Artistic)	

  

	I	II	
Pass II	659	192	851
	70	36	106
Fail II			
	729	228	957

$$\chi^2 = 6.369 \quad df = 1 \quad Sig = .0132 \quad p < .05$$

Table 2 LCS Recruit-Environment Congruency within  
Squads Related to Attrition  
(recruit LCS type similar both to NCO + squad mode)

		No	Yes	
Pass I		661	134	795
		166	19	185
Fail I		827	153	980

$$\chi^2 = 4.45240 \quad df = 1 \quad Sig = .0349 \quad p < .05$$

Table 3

Differences in Mean Scores on Levenson's  
LCS Sub Scales I, E<sub>C</sub>, E<sub>PO</sub> between  
Recruits who adapted to their Squad and  
those who did not

Sub Scale	Cat	M	SD	N	df	F	Sig
Internal I	Pass I	35.977	6.639	795	1	1.315	.2518
	Fail I	35.357	6.595	185			
External Chance E(C)	Pass I	17.355	7.557	795	1	4.035	.0449*
	Fail I	18.600	7.758	185			
External Powerful Others E(PO)	Pass I	22.547	8.686	795	1	0.017	.8977
	Fail I	22.638	8.423	185			

\*  $p < .05$

Table 4

Significant Correlations Between a Subset of Super's  
Fifteen Work Values and Six Categories of Attrition

V	2	3	7	9	F-III	F-I
CR	-.030	-.005	-.062	-.047	-.068*	-.063*
Ma	-.081*	.009	-.012	-.037	-.069*	-.059
Su	.067*	.036	-.009	.017	.042	.049
WL	-.034	.066*	-.052	-.070*	-.081*	-.053
ER	-.021	.038	-.055	-.094**	-.090**	-.070*
IS	-.019	.010	-.073*	-.041	-.063*	-.053

$p < .05^*$

$p < .01^{**}$

F-III = (NCO designated failures)

F-I = (adaptation to squad)

CR = Creativity

Ma = Management

Su = Surroundings

WL = Way of Life

ER = Economic Returns

IS = Intellectual Stimulation

## Results and Discussion

In Table 1, due to the small number of recruits with C, E, S and A personality characteristics the data were collapsed using Holland's Hexagonal model which groups personality types according to their similarity (Holland 1973). As a group the Enterprising, Social and Artistic types showed significantly higher attrition from recruit training than the Realistic, Investigative, Conventional types, who by their numbers constituted an I, R, C environment, thus supporting Holland's personality-environment congruence hypothesis as a theory of career change.

In Table 2, Holland's personality-environment hypothesis is again supported. However, only when there was an internally consistent environment was attrition significantly less, that is, when recruits shared perceptions on the squad reinforcement contingencies with both the squad NCO and modal group type within the squad. It is noteworthy that ten of the sixteen congruent squads were Internals. Cook et al (1980) found when accounting for differences in attrition between platoons during Marine Corps Training the Locus of Control was found to be significantly related to attrition. It was found that a change in the Internal direction occurred in the low and medium attrition platoons while a change in the External direction occurred in the high attrition platoons. The authors propose that different training environments have a mediating effect. A consistent Internal environment would maximize this effect.

In Table 3, those who do not adapt to their initial squad tend to score significantly higher on the External Chance sub scale with no differences on the I or E<sub>po</sub> sub scales. The studies from which the hypothesis was formulated that Externals would adapt better to the high constraint, high structure, high discipline military environment (Parent et al 1975; and Wolk 1976) did not control for local reinforcement contingencies. As indicated by the Cook et al (1980) study reinforcement contingencies independent from these three factors could lead to shifts in perception of control with consequent effects in adaptation. Those scoring high on Ec would require a greater shift and consequently would be less likely to adapt.

In Table 4, the largely negative correlation between the work values; Creativity, Management, Economic Returns, Intellectual Stimulation and Attrition would be what one might expect in a largely Realistic group of individuals with their "blue collar" orientation. Two values correlate positively with attrition, Way of Life and Surroundings. Those who perform well but request release tend to value Way of Life highly. Those who perform poorly (failing) and request release, value Surroundings highly. It is interesting that in spite of disparate data sets, military people in the United Kingdom, United States and Canada commonly express unhappiness with pay and lifestyle (Wiskoff and Mutlock 1980). However, in view of the negative correlation with attrition it would seem that pay is not an important consideration at the Recruit level.

The results of this study would suggest that there is a significant relationship between personality as measured by VPI, WVE and LCS and attrition from the Canadian Forces Recruit school. The evidence suggests an interaction effect between the individuals personality and the environment as defined by other personality types. Also, the approach confirms the usefulness of a micro organizational design and the use of multiple dependant variables.

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